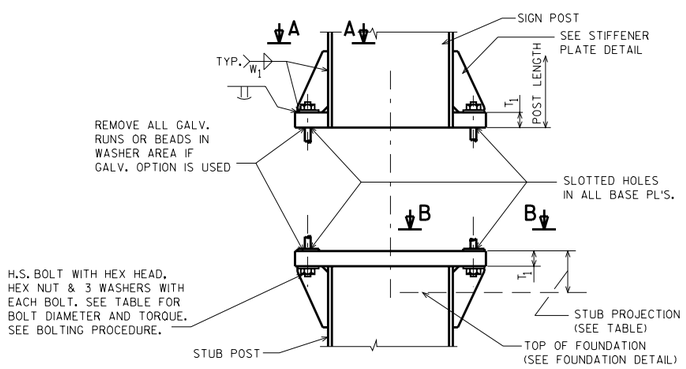
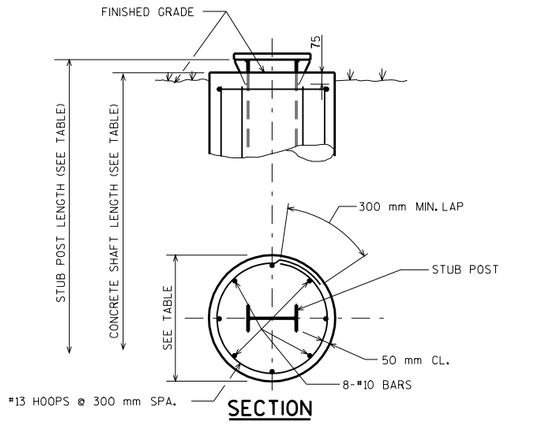
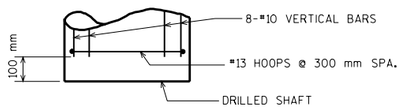


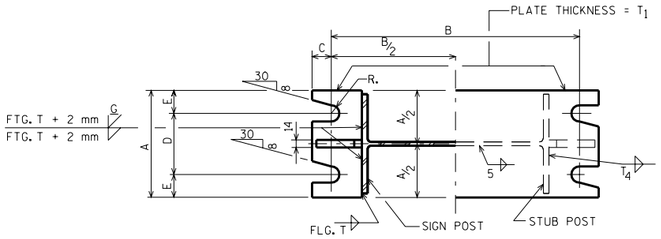
SIGN POST AND STUB POST ELEVATION



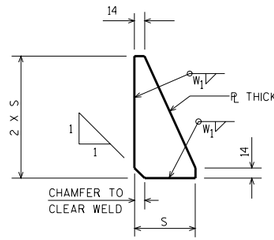
SECTION



FOUNDATION DETAIL

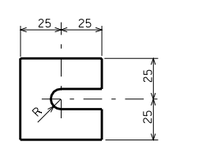


SECTION A-A SECTION B-B



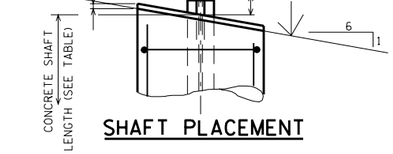
STIFFENER PLATE DETAIL

(SEE TABLE FOR DIMENSIONS)

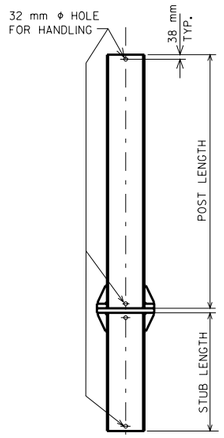


FURNISH 2 @ .3 mm ± THICK AND 2 @ .8 mm ± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO A.S.T.M. - B36.

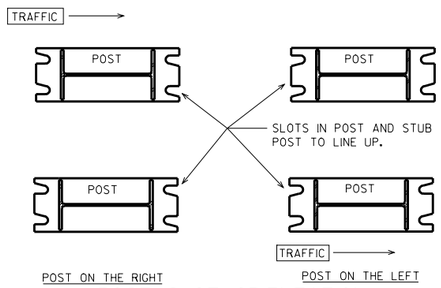
SHIM DETAIL



SHAFT PLACEMENT



POST DETAIL



POST SLOT ORIENTATION

QUANTITIES FOR 1 FOOTING		
	CONC. MASONRY m^3	H. S. REINF. STEEL kG
A	0.45	15.5
B	0.63	22.0
C	0.67	22.6
D	0.72	25.2
E	0.76	27.7

REINF.	TYPE	#10-VERTICAL	#13-HOOPS
	A	8 @ 1350 mm	5 @ 1900 mm
	B	8 @ 1950 mm	7 @ 1900 mm
	C	8 @ 2100 mm	7 @ 1900 mm
	D	8 @ 2250 mm	8 @ 1900 mm
	E	8 @ 2400 mm	9 @ 1900 mm

TYPE	DIMENSION / POST SIZE	BASE CONNECTION DATA TABLE: BOLT SIZE & TORQUE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	T_1 (mm)	T_4 (mm)	W_1 (mm)	R (mm)	S (mm)	FOUNDATION DATA: STUB LENGTH (mm)	STUB PROJECTION (mm)	SHAFT DIAMETER (mm)	SHAFT LENGTH (mm)	K (kG)
A	W250 X18	M20 @ 102 N-m	133	314	22	89	22	25	5	8	10	54	1100	75	610	1550	35.1
B	W310 X 24	M22 @ 115 N-m	140	413	25	89	25	32	6	8	12	75	1700	75	610	2150	67.8
C	W310 X 28	M22 @ 115 N-m	140	413	25	89	25	38	8	8	12	75	1850	75	610	2300	82.7
D	W310 X 33	M22 @ 115 N-m	140	413	25	89	25	38	10	8	12	75	2000	75	610	2450	96.8
E	W310 X 39	M24 @ 122 N-m	178	413	32	102	38	38	10	8	13	75	2150	75	610	2600	124.1

STRUCTURAL CARBON STEEL PAY WTS. (1 POST) = K+ (POST LENGTH X POST WT.)
"K" INCLUDES STUB, BASE PLATES, STIFFS., BOLTS, AND WASHERS.

DESIGN DATA

WIND PRESSURE = 121 kM/HR
WIND COMPONENTS - NORMAL = 1.0 TRANSVERSE = 0.0
ICE LOAD = 144 Pa

GROUP LOADS	PERCENT OF ALLOWABLE STRESS	
1. DEAD	100	
2. DEAD & WIND	140	
3. DEAD, ICE & ½ WIND ▲	140	▲1.2 kPa

ALLOWABLE SOIL PRESSURE = 144 kPa

WIND LOAD WAS APPLIED TO THE AREA OF THE SIGN AND TO THE SUPPORTING MEMBERS.

ICE LOAD WAS APPLIED TO ONE FACE OF THE SIGN AND AROUND THE SURFACE OF THE SUPPORTING MEMBERS.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DESIGN CONFORMS WITH A.A.S.H.T.O. SPECIFICATIONS 1985. ALL POST, POST STUBS & ATTACHMENTS SHALL BE A.S.T.M. A709M GRADE 345, EXCEPT WHERE CONTRACT REQUIRES A709M GRADE 345W.

IF A709M GRADE 345 MATERIALS ARE USED, THE POST, BASE PLATES, UPPER 150 mm OF STUB POST, FLANGE SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER FABRICATION.

H.S. BOLTS, WASHERS & NUTS SHALL BE A325 TYPE 3 NOT GALVANIZED WHEN CONTRACT REQUIRES A709M GRADE 345W POSTS, POST STUBS, AND ATTACHMENTS.

H.S. BOLTS, WASHERS, & NUTS SHALL BE A325 GALVANIZED WHEN POSTS, POST STUBS AND ATTACHMENTS ARE A709M GRADE 345 AND GALVANIZED.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE.

BOLTING PROCEDURE - BASE CONNECTION

1. ASSEMBLE SIGN POST TO STUB POST WITH BOLTS AND ONE OF THE FLAT WASHERS ON EACH BOLT BETWEEN PLATES.

2. SHIM AS REQ'D. TO PLUMB POST.

3. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 300 mm OR 380 mm WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. (SEE TABLE)

4. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

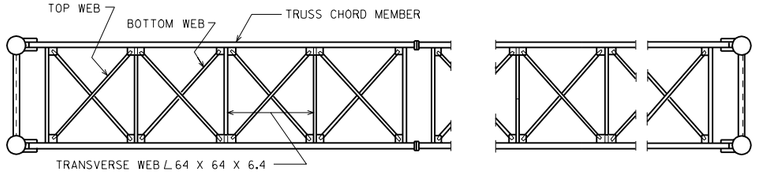
NOTE:
TIGHTEN THE HIGH STRENGTH BOLTS TO THE TORQUE SHOWN. DO NOT OVER TIGHTEN.

BREAK AWAY SIGN SUPPORT DETAIL

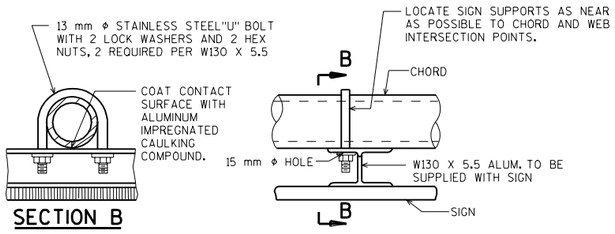
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DEVELOPMENT SECTION

APPROVED: _____ DATE: 1/99

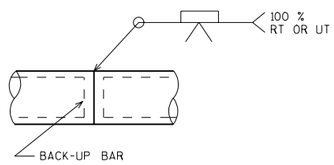
METRIC STANDARD 39.1



PLAN

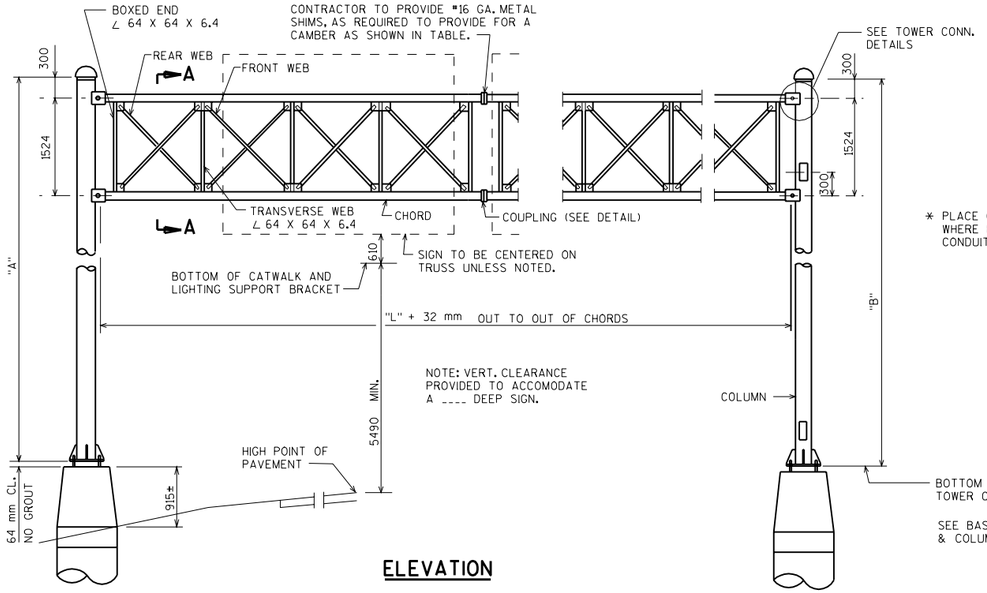


SECTION B

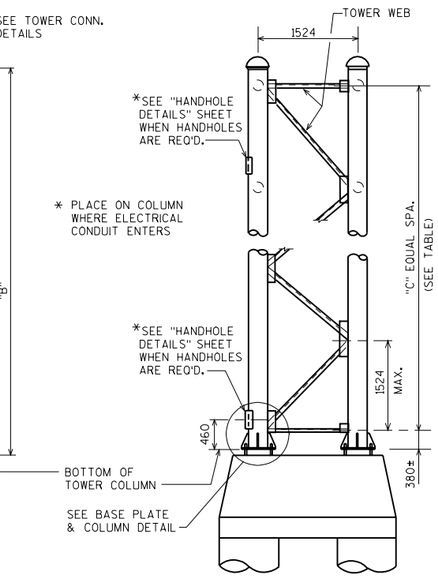


CHORD SPLICE

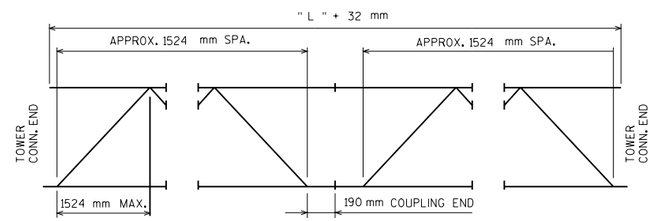
TYPICAL SIGN CONNECTION



ELEVATION

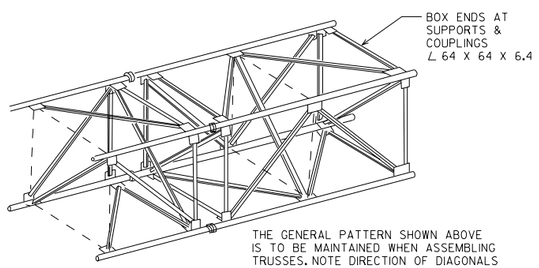


END VIEW

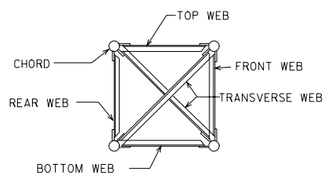


TRUSS ARRANGEMENT

FABRICATOR MAY MAKE TRUSSES ANY LENGTH KEEPING A SECTION A MINIMUM OF 6096 mm & A MULTPLE OF 1524 mm. CHORD FIELD SPLICES SHALL BE MADE WITH COUPLINGS. CHORD SHOP SPLICE SHALL BE THE WELDED SPLICE SHOWN ABOVE.



TYPICAL TRUSS SECTION



SECTION A

NOTES

DRAWINGS SHALL NOT BE SCALED.
STEEL COLUMN PIPE SHALL BE A.P.I. SPEC. 5L GRADE X42 FY = 289 MPa
ALL STEEL PIPE MEMBERS OF TRUSS SHALL BE A.P.I. SPEC. 5L GRADE X42 FY = 289 MPa
PLATES, BARS, STRUCTURAL ANGLES SHALL BE A.S.T.M. A709 GRADE 36 FY = 248 MPa
ALL STRUCTURAL STEEL MEMBERS SHALL BE GALVANIZED.
ALL BOLTED CONNECTIONS SHALL BE MADE WITH M20 A325M BOLTS, GALVANIZED
A.S.T.M. A153, CLASS C.
WELDED CONNECTIONS CAN BE USED IN LIEU OF BOLTED CONNECTIONS, IF UNIT CAN BE GALVANIZED IN ONE PIECE.
STEEL ANCHOR BOLTS SHALL BE A.A.S.H.T.O. M314-90 GRADE 380. FY = 380 MPa
SIGNS OR BLANKS SHALL BE INSTALLED ON TRUSS AT TIME OF ERECTION.
BLANKS SHALL BE 1/4 THE LENGTH OF THE BRIDGE, 610 mm DEEPER THAN C TO C OF CHORDS & SHALL BE CENTERED ON THE BRIDGE. SIGNS SHALL BE AS DESIGNATED IN PLANS.
THE UPPER 300 mm OF ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE A.A.S.H.T.O. SPECIFICATION AS STATED IN SECTION 641. OF THE WIS. D.O.T. STANDARD SPECIFICATIONS.
WELD TEST AS PER AWS D1.1.

DESIGN DATA

DEAD LOAD - WT. OF SIGN, SUPPORTING STRUCTURE, CATWALK, LIGHTS AND RAILINGS.
LIVE LOAD - SINGLE LINE LOAD OF 2.3 kN DISTRIBUTED OVER 610 mm OF CATWALK.
ICE LOAD - 144 Pa TO 1 FACE OF SIGN & AROUND SURFACE OF MEMBERS.
WIND PRESSURE - 137 km/h TO SIGN AREA & EXPOSED MEMBERS.

WIND COMPONENTS	NORMAL	TRANSVERSE
COMBINATION 1	1.0	0.2
COMBINATION 2	0.6	0.3
GROUP LOADS	% OF ALLOWABLE STRESS	
1. DEAD	100	
2. DEAD + WIND	140	
3. DEAD + ICE + 1.2 KPA WIND	140	

TABLE

STRUCTURE	A	B	C	CHORDS O.D. X THK.	TOP & BOTTOM WEB	FRONT & REAR WEB	COUPLING PLATE "D1" & "T"	BOLT CIRCLE DIA. "D2"	NO. OF BOLTS IN COUPLING	CAMBER	COLUMN O.D. X THK.	TOWER WEBS	"L"

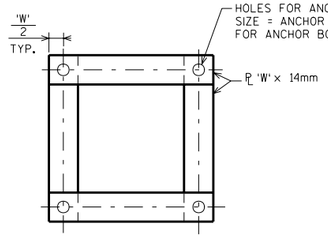
TO BE DESIGNED

4-CHORD GALVANIZED STEEL SIGN BRIDGE

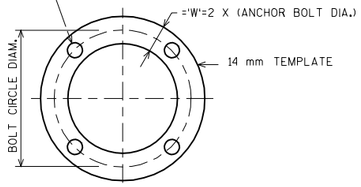
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DEVELOPMENT SECTION

APPROVED: _____ DATE: 1/99

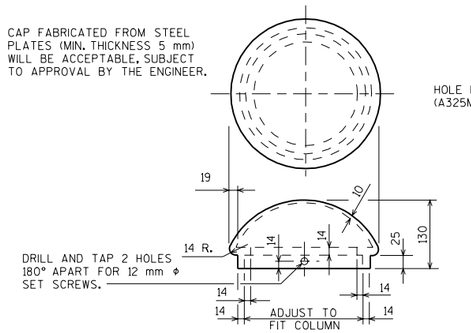
METRIC STANDARD 39.2



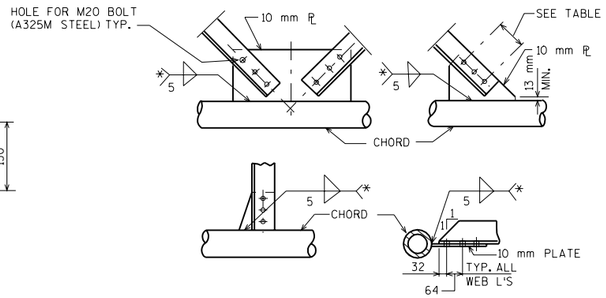
ALTERNATE
ANCHOR PLATE/TEMPLATE PLAN



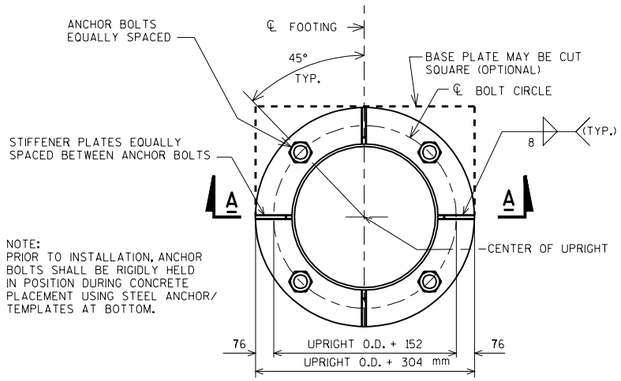
ANCHOR PLATE/TEMPLATE PLAN



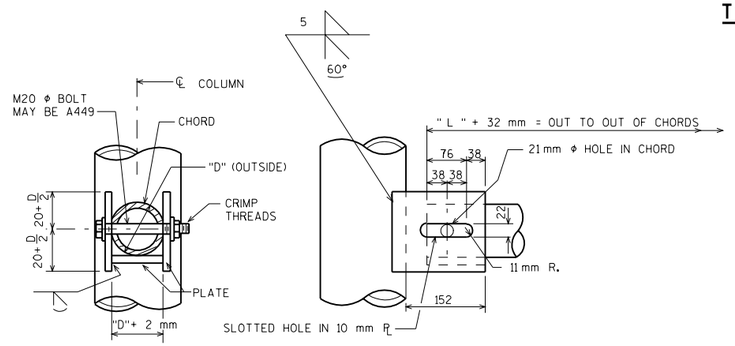
TOWER CAP DETAIL



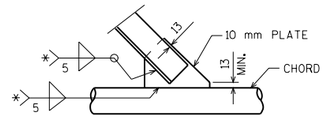
TYPICAL TRUSS CONNECTION DETAILS



PLAN VIEW
(BASE PLATE)

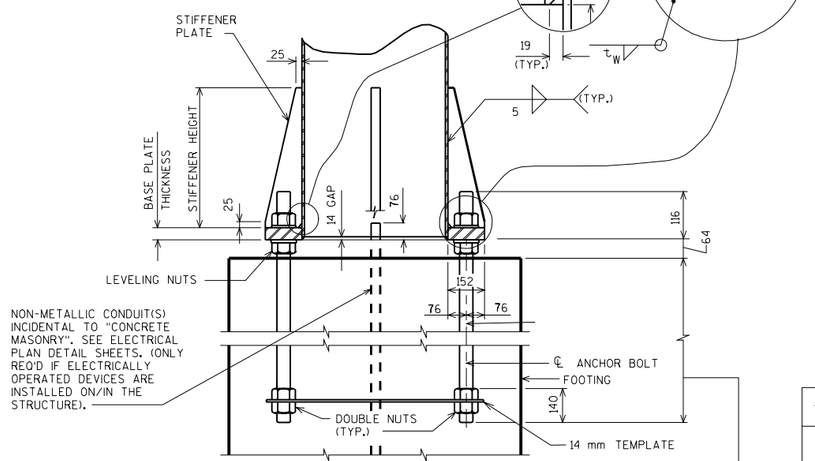


TOWER CONNECTION DETAIL



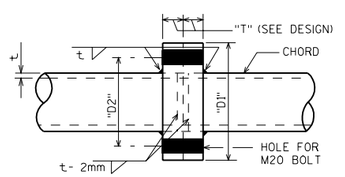
TYPICAL WELDED ALTERNATE

*ANGLE	WELD LENGTH	NO. OF BOLTS
64×64×6.4	280 mm	3
76×76×4.8	255 mm	3
76×76×6.4	330 mm	4
76×76×7.9	420 mm	5
76×76×9.5	495 mm	6
102×102×6.4	460 mm	5
102×102×7.9	560 mm	6
102×102×9.5	660 mm	8
102×102×11.1	765 mm	9
102×102×12.7	865 mm	10



SECTION A-A

790 mm FOR 32 mm ANCHOR BOLTS
915 mm FOR 38 mm ANCHOR BOLTS
1040 mm FOR 44 mm ANCHOR BOLTS



COUPLING DETAIL

BASE PLATE & UPRIGHT COLUMN DETAILS

STRUCTURE	COLUMN O.D. X THK.	ANCHOR BOLTS	BASE PLATE THICKNESS (mm)	STIFFENER PLATE THICKNESS (mm)	STIFFENER PLATE HEIGHT (mm)	t_W (mm)

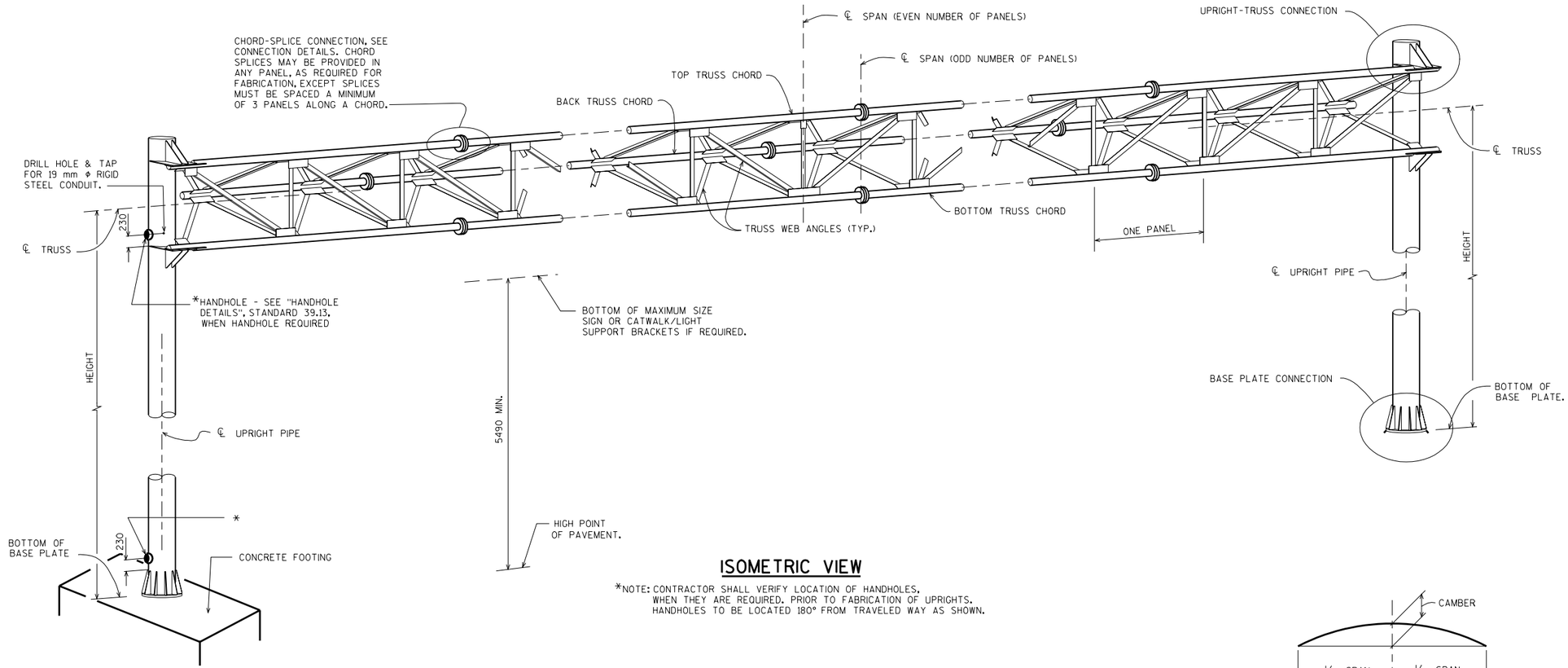
TO BE DESIGNED

4-CHORD
SIGN BRIDGE DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DEVELOPMENT SECTION

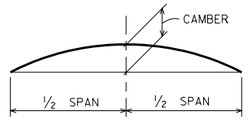
APPROVED: _____ DATE: 1/99

METRIC STANDARD 39.3



ISOMETRIC VIEW

*NOTE: CONTRACTOR SHALL VERIFY LOCATION OF HANDHOLES. WHEN THEY ARE REQUIRED. PRIOR TO FABRICATION OF UPRIGHTS. HANDHOLES TO BE LOCATED 180° FROM TRAVELED WAY AS SHOWN.



CAMBER DIAGRAM

SPAN SIGN STRUCTURE NOTES

1) SIGN STRUCTURE MATERIALS SHALL BE AS FOLLOWS:
   UPRIGHT & CHORDS (STEEL PIPE) -> API-5L-X42 (289 MPa YIELD)
   WEBS AND SPLICES (STEEL ANGLES) -> ASTM A709M GRADE 250
   STEEL PLATES -> ASTM A709M GRADE 250
   WELD METAL -> E480XX
   BOLTS (EXCEPT ANCHOR BOLTS) -> ASTM A325M

2) STEEL ANCHOR BOLTS SHALL BE AASHTO 314 GRADE 380. NUTS FOR ANCHOR BOLTS SHALL BE ASTM A563M GRADE A HEAVY HEX.

3) ALL STEEL ITEMS SHALL BE GALVANIZED AS FOLLOWS:
   STRUCTURAL SHAPES AND PLATES -> ASTM A 123
   ALL NUTS, BOLTS AND WASHERS -> ASTM A 153 CLASS C OR D DEPENDING ON SIZE

4) ALL HIGH STRENGTH BOLTS, NUTS, AND WASHERS, EXCEPT ANCHOR BOLTS AND SIGN CONNECTION U-BOLTS SHALL MEET THE REQUIREMENTS OF STANDARD SPEC. 506.2.5 AND BE INSTALLED IN ACCORDANCE WITH STANDARD SPEC. 506.3.12. ANCHOR BOLTS SHALL HAVE DOUBLE NUTS.

5) CONCRETE SHALL BE GRADE A WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH (F'c) OF 24 MPa FOR ALL ENVIRONMENTAL CLASSIFICATIONS.

6) REINFORCING STEEL SHALL BE ASTM A615M GRADE 420.

7) ALTERNATE DESIGNS FOR THIS STRUCTURE ARE NOT ALLOWED. DIFFERENT SIZE AND STRENGTH OF MEMBERS MAY BE SUBSTITUTED WITH THE APPROVAL OF THE OFFICE OF DESIGN.

8) DO NOT GROUT THE SPACE BETWEEN TOP OF FOOTING AND BOTTOM OF BASE PLATE.

9) SHOP DRAWINGS FOR THIS STRUCTURE ARE REQUIRED AND FABRICATION SHALL NOT BEGIN UNTIL THESE SHOP DRAWINGS ARE APPROVED.

10) THE STRUCTURE MUST BE ASSEMBLED AFTER GALVANIZING AND PRIOR TO SHIPMENT TO THE SITE TO ASSURE FIT UP. IT MAY BE DISASSEMBLED IN SECTIONS FOR SHIPPING. ALL HIGH STRENGTH BOLTED CONNECTIONS (WEB TO CHORD GUSSET) BETWEEN CHORD SPLICE POINTS SHALL BE FULLY TIGHTENED IN THE SHOP. THE TOWER/CHORD, CHORD SPLICE, AND ACROSS THE SPLICE WEB TO CHORD GUSSET CONNECTIONS SHALL BE FULLY TIGHTENED IN FIELD.

11) THE DESIGN WIND SPEED IS 137 km/h WITH A 30 PERCENT GUST FACTOR.

12) PROVIDE A CAMBER WITH THE MAXIMUM UPWARD DEFLECTION AS CALLED FOR ON THE CAMBER DIAGRAM. INDICATE ON THE SHOP DRAWINGS THE METHOD TO BE USED TO PROVIDE THE REQUIRED CAMBER.

13) SIGN PANELS ATTACHED TO THE TRUSS SHALL BE CENTERED (IN ELEVATION) ON THE STRUCTURE. SIGN PANELS SHALL BE ALUMINUM.

14) EXCEPT FOR ANCHOR BOLTS, ALL BOLT HOLE DIAMETERS SHALL BE EQUAL TO THE BOLT DIAMETER PLUS 2 mm. PRIOR TO GALVANIZING, HOLE DIAMETERS FOR ANCHOR BOLTS SHALL NOT EXCEED THE BOLT DIAMETER PLUS 13 mm.

15) CONTRACTOR SHALL ATTACH SIGN PANELS TO THE TRUSS CHORDS AS SHOWN ON "TYPICAL SIGN CONNECTION", STANDARD 39.5. SIGN PANELS AND HARDWARE REQUIRED TO ATTACH SIGNS TO TRUSS CHORDS, INCLUDING ALL W130 X 5.5 ALUMINUM SIGN SUPPORT BRACKETS, U-BOLTS, AND POST CLIP HARDWARE, WILL BE SUPPLIED AND DELIVERED TO SITE BY OTHERS.

16) ANCHOR BOLTS SHALL BE PROVIDED WITH TEMPLATES TOP AND BOTTOM TO MAINTAIN VERTICAL ALIGNMENT AND SPACING DURING CONCRETE PLACEMENT. TEMPLATES MAY NOT BE WELDED TO THE ANCHOR BOLTS.

17) SIGNS OR BLANKS SHALL BE INSTALLED ON TRUSS AT TIME OF ERECTION. BLANKS SHALL BE 1/4 THE LENGTH OF BRIDGE, 610 mm DEEPER THAN C TO C OF CHORDS & SHALL BE CENTERED ON THE BRIDGE.

18) SHOP WELDED CONNECTIONS MAY BE USED IN LIEU OF BOLTED CONNECTIONS IN TRUSS IF UNIT CAN BE GALVANIZED IN ONE PIECE.

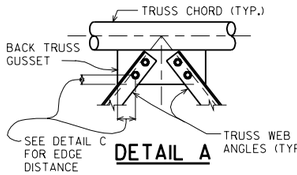
19) ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

3-CHORD STEEL SIGN BRIDGE

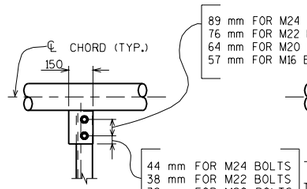
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DEVELOPMENT SECTION

APPROVED: _____ DATE: 4/99

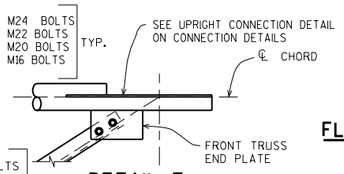
METRIC STANDARD 39.4



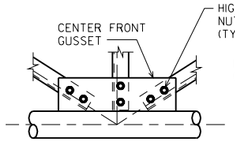
DETAIL A



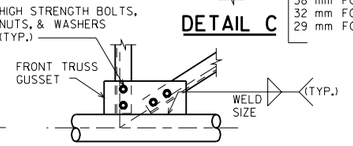
DETAIL C



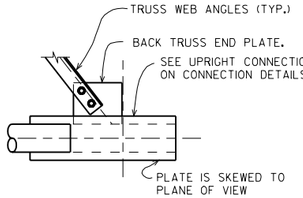
DETAIL E



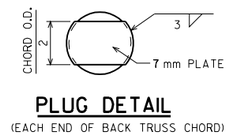
DETAIL B



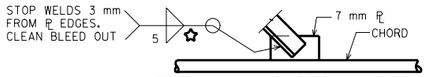
DETAIL D



DETAIL F

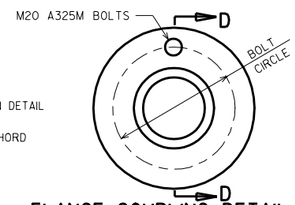


PLUG DETAIL
(EACH END OF BACK TRUSS CHORD)

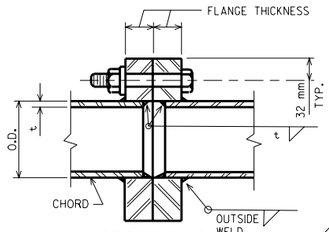


TYPICAL WELDED ALTERNATE
(GUSSET PLATE DESIGN IS BASED ON BOLTED CONNECTION. PLATE SIZES SHALL BE INCREASED IF REQUIRED TO PROVIDE MINIMUM WELD LENGTH FOR ALT. WELDED CONNECTION.)

BOLT SIZE	✿ MINIMUM LENGTH OF 5 mm WELD
M16	165
M20	240
M22	320
M24	420



FLANGE COUPLING DETAIL



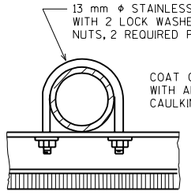
SECTION 'D'

COUPLING DESIGN

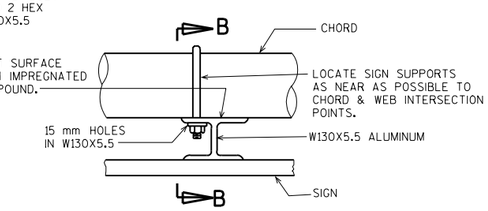
*CHORD SIZE (O.D. X t)	NUMBER OF BOLTS REQ'D.	BOLT CIRCLE DIAMETER	FLANGE THICKNESS	OUTSIDE WELD SIZE

TO BE DESIGNED

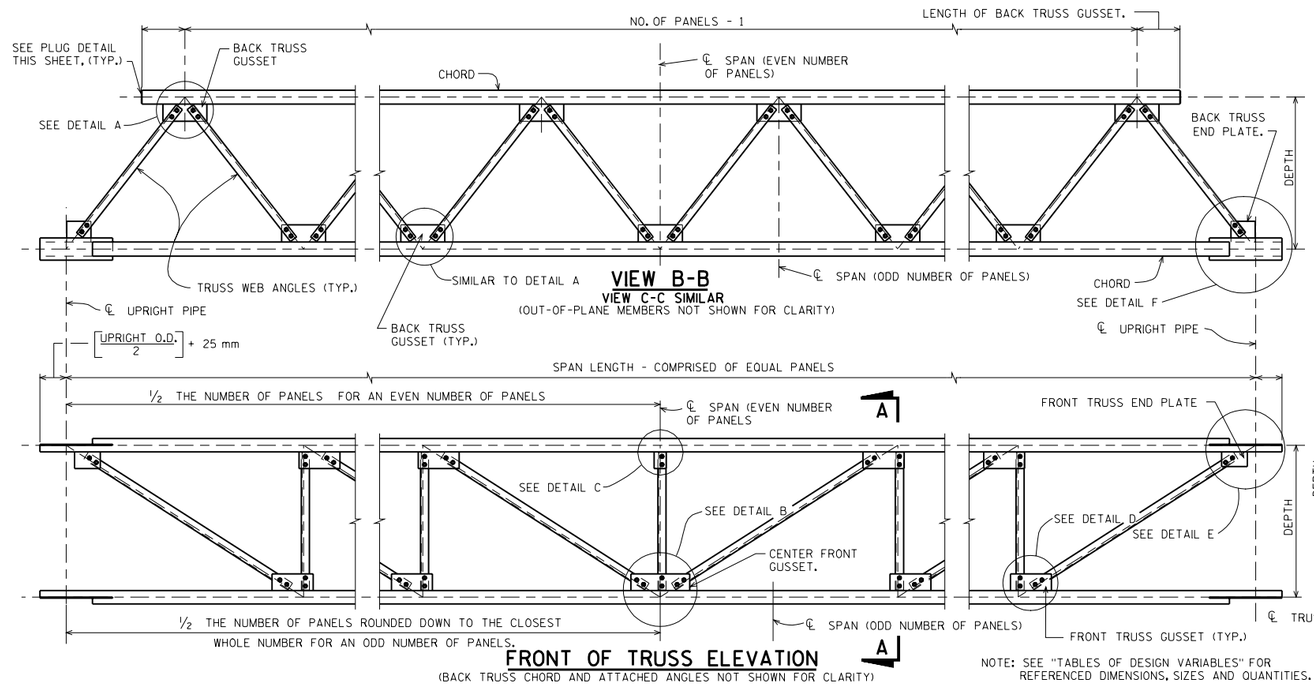
*PIPE OUTSIDE DIAM. IN mm X PIPE WALL THICKNESS IN mm



SECTION B

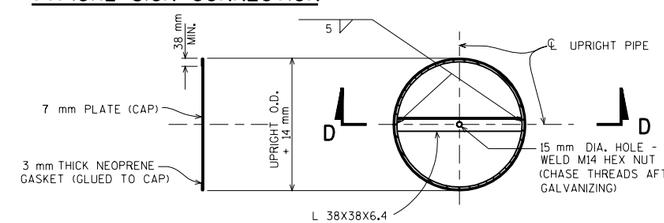


TYPICAL SIGN CONNECTION



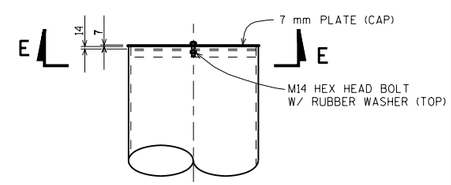
FRONT OF TRUSS ELEVATION
(BACK TRUSS CHORD AND ATTACHED ANGLES NOT SHOWN FOR CLARITY)

NOTE: SEE "TABLES OF DESIGN VARIABLES" FOR REFERENCED DIMENSIONS, SIZES AND QUANTITIES.

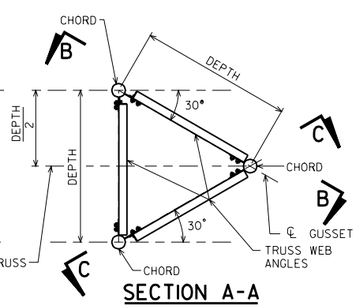


SECTION D-D

SECTION E-E



UPRIGHT CAP DETAIL



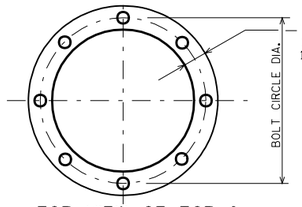
SECTION A-A

3-CHORD STEEL SIGN BRIDGE TRUSS ELEVATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DEVELOPMENT SECTION

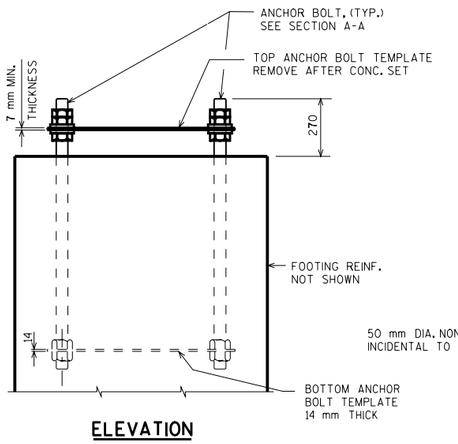
APPROVED: _____ DATE: 4/99

METRIC STANDARD 39.5

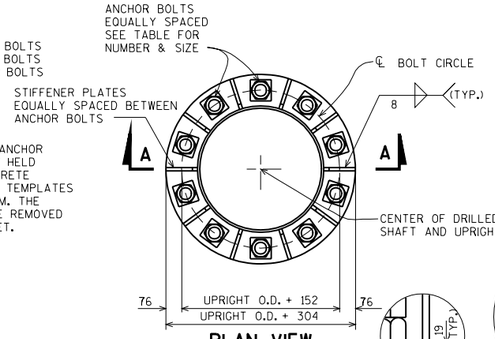


NOTE:
PRIOR TO INSTALLATION ANCHOR BOLTS SHALL BE RIGIDLY HELD IN POSITION DURING CONCRETE PLACEMENT USING STEEL TEMPLATES AT THE TOP AND BOTTOM. THE TOP TEMPLATE SHALL BE REMOVED AFTER THE CONC. HAS SET.

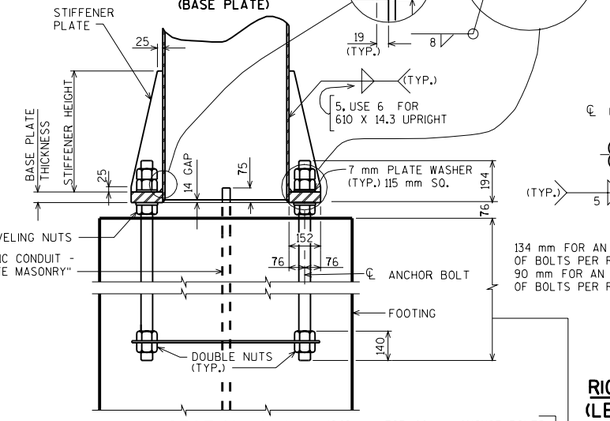
TOP VIEW OF TOP & BOTTOM TEMPLATES



ELEVATION

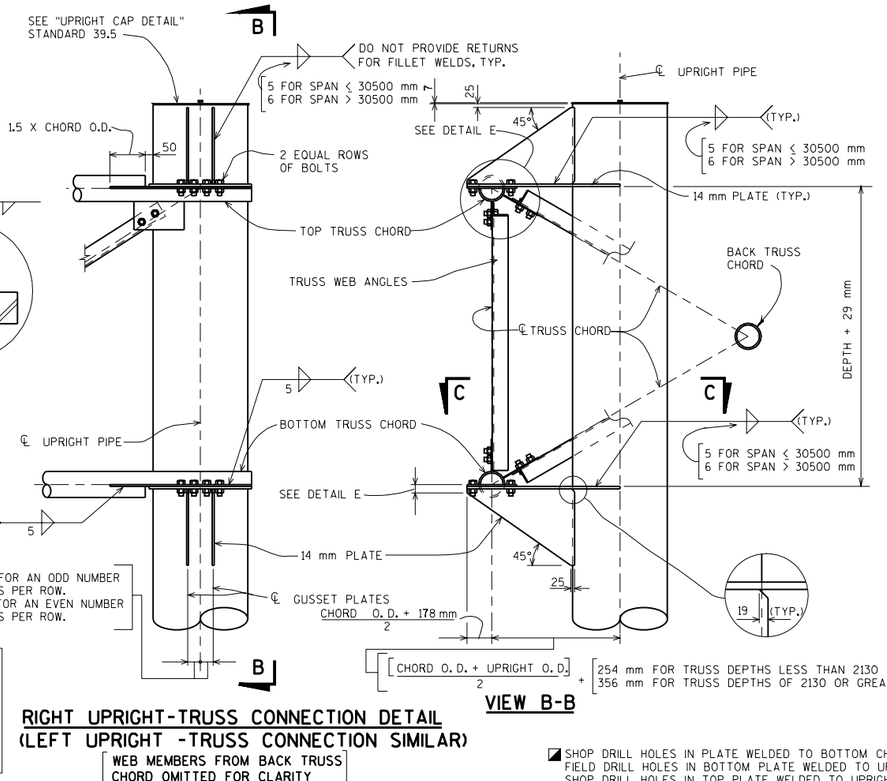


PLAN VIEW (BASE PLATE)



SECTION A-A

1040 mm FOR 44 mm ANCHOR BOLTS
1170 mm FOR 51 mm ANCHOR BOLTS
1300 mm FOR 57 mm ANCHOR BOLTS



RIGHT UPRIGHT-TRUSS CONNECTION DETAIL (LEFT UPRIGHT -TRUSS CONNECTION SIMILAR)

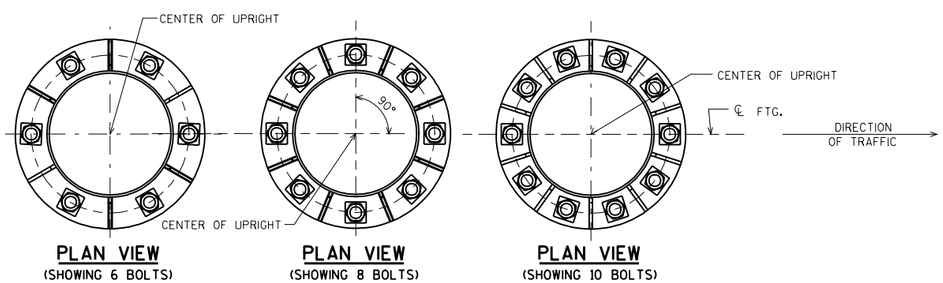
[WEB MEMBERS FROM BACK TRUSS CHORD OMITTED FOR CLARITY]

VIEW B-B

* UPRIGHT SIZE	ANCHOR BOLTS	BASE PLATE THICKNESS	STIFFENER PLATE THICKNESS	STIFFENER PLATE HEIGHT

TO BE DESIGNED

*PIPE OUTSIDE DIAMETER IN mm X PIPE WALL THICKNESS IN mm

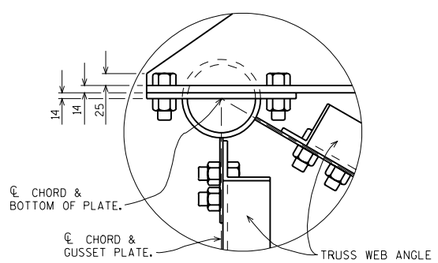


PLAN VIEW (SHOWING 6 BOLTS)

PLAN VIEW (SHOWING 8 BOLTS)

PLAN VIEW (SHOWING 10 BOLTS)

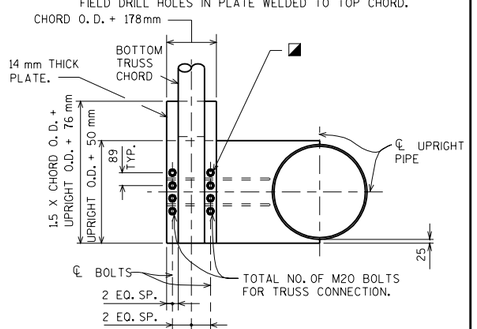
BASE DESIGN



DETAIL E

NOTE: SEE 'TABLES OF DESIGN VARIABLES' FOR REFERENCED DIMENSIONS, SIZES AND QUANTITIES.

◪ SHOP DRILL HOLES IN PLATE WELDED TO BOTTOM CHORD.
FIELD DRILL HOLES IN BOTTOM PLATE WELDED TO UPRIGHT.
SHOP DRILL HOLES IN TOP PLATE WELDED TO UPRIGHT.
FIELD DRILL HOLES IN PLATE WELDED TO TOP CHORD.



SECTION C-C

(WITH GUSSET PLATE AND ANGLES OMITTED FOR CLARITY)

3-CHORD STEEL SIGN BRIDGE CONNECTION AND BASE DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DEVELOPMENT SECTION

APPROVED: _____ DATE: 4/99

METRIC STANDARD 39.6

STRUCTURE	SPAN (mm)	TRUSS DESIGN						
		DEPTH (mm)	CHORD SIZE (1)	WEB ANGLE SIZE (mm)	PANELS (NO. & LENGTH)	WEB BOLT SIZE	TRUSS CONN. (2)	CAMBER (mm)

STRUCTURE	SPAN (mm)	GUSSET PLATE DESIGN						
		THICK-NESS	BACK TRUSS	FRONT TRUSS	CENTER FRONT	BACK TRUSS END PLATE	FRONT TRUSS END PLATE	WELD SIZE

STRUCTURE	SPAN (mm)	UPRIGHT DESIGN		
		"HEIGHT" (mm) (3)		UPRIGHT SIZE (1)
		LEFT	RIGHT	

(1) OUTSIDE DIAMETER (O.D.) X WALL THICKNESS IN MILLIMETERS.

(2) NUMBER OF A325 19 MM ϕ BOLTS PER CONNECTION.
(NOTE: ONE TRUSS HAS FOUR CONNECTIONS.)

(3) "HEIGHT" IS MEASURED FROM ℄ TRUSS TO BOTTOM OF BASE PLATE. LEFT AND RIGHT SIDES ARE WITH RESPECT TO THE DIRECTION VIEWED FROM AS SHOWN ON "SIGN BRIDGE LAYOUT" SHEET.

NOTES

DESIGN IS TO BE BASED ON THE FOLLOWING:

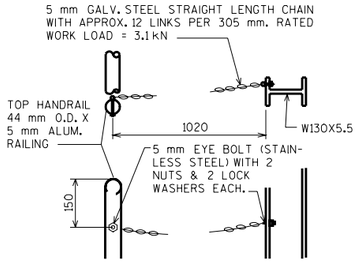
1. MAXIMUM SIGN DEPTH = 3650 mm
2. SIGN AREA EQUAL TO (.6 X SPAN) X 3650 mm HIGH.
3. NO CATWALK.
4. ONE DIRECTION TRAFFIC (SIGNS ON ONE SIDE).
5. NO FUTURE WIDENING OR RAISING OF STRUCTURE PLANNED.
6. TYPE 1 SIGN PANELS (EXTRUDED ALUMINUM SECTIONS WITH REFLECTIVE BACKING) & ALUMINUM BRACKETS.
7. DESIGN 4 CHORD SYSTEM (PER STANDARD 39.2 & 39.3) WHEN ANY OF CRITERIA (1) THROUGH (6) ARE VIOLATED.
8. SIGNS TO BE CENTERED ON TRUSS.
9. DESIGNER IS TO PROVIDE DESIGN (FILL IN DESIGN VARIABLE BOXES IN TABLE ABOVE AND AS SHOWN ON STANDARDS 39.5 & 39.6) FOR EACH SIGN BRIDGE STRUCTURE. OTHER DETAILS SHOWN IN STD. 39.5 & 39.6 ARE ADEQUATE PROVIDED THE CRITERIA SHOWN ABOVE AND IN THE BRIDGE MANUAL ARE FOLLOWED.
10. STRUCTURE IS ANALYZED AS A SPACE FRAME WITH CHORDS BEING CONSIDERED CONTINUOUS MEMBERS PINNED TO THE UPRIGHT BRACKETS. WEB MEMBERS ARE CONSIDERED PINNED AT ENDS BUT ARE DESIGNED FOR ECCENTRIC END CONNECTIONS.

3-CHORD STEEL SIGN BRIDGE DESIGN VARIABLES

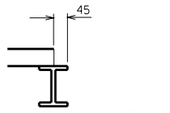
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DEVELOPMENT SECTION

APPROVED: _____ DATE: 1/99

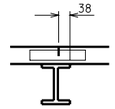
METRIC STANDARD 39.7



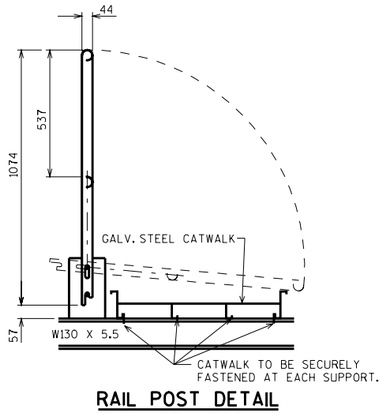
SAFETY CHAIN DETAIL



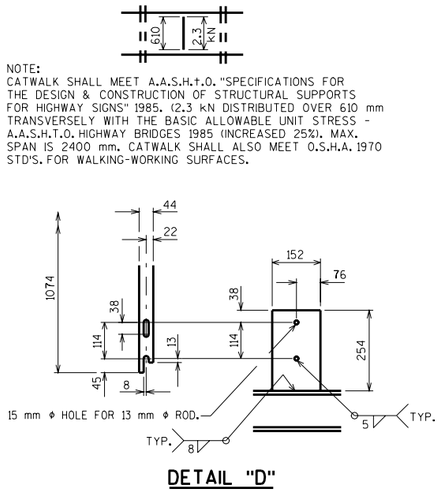
CATWALK TERMINATION DETAIL



CATWALK SPLICE LOCATION DETAIL

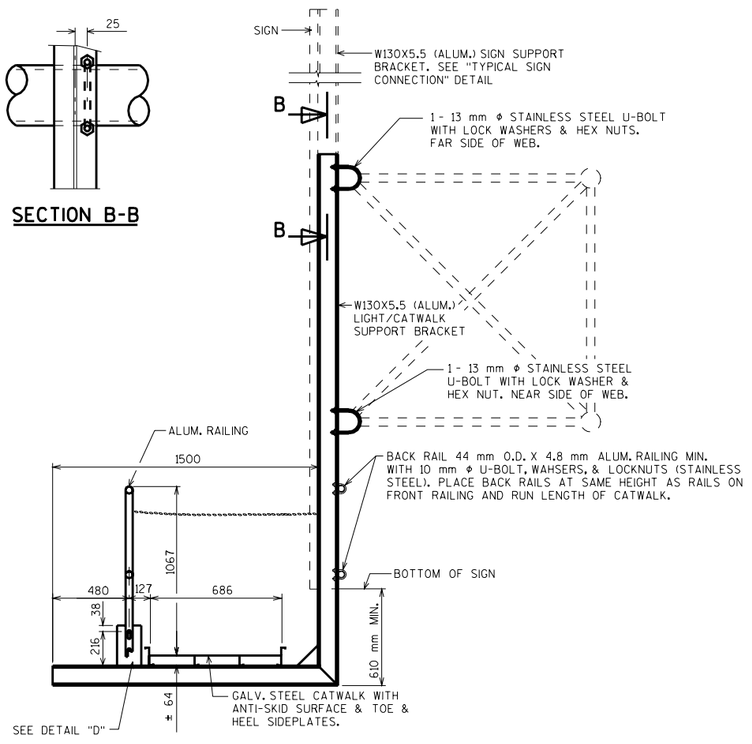


RAIL POST DETAIL

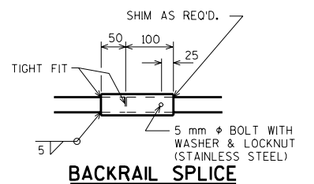


DETAIL "D"

SECTION B-B

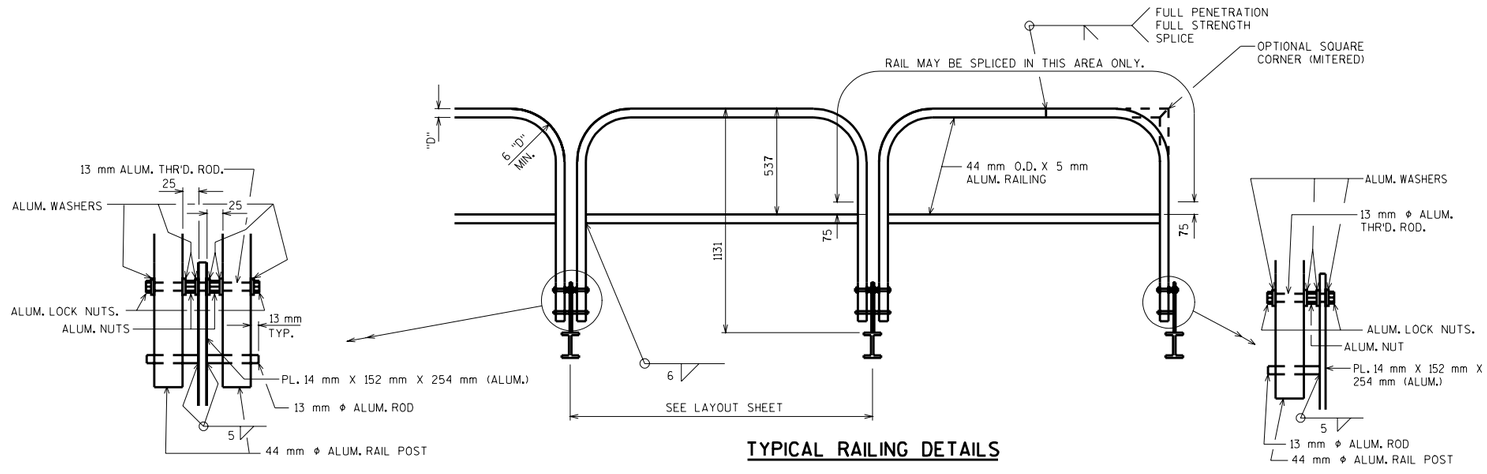


SECTION THRU WALKWAY

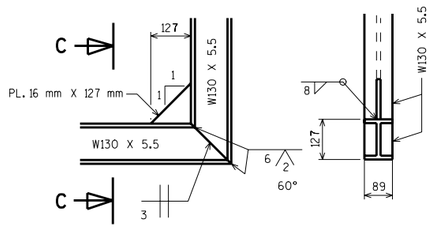


BACKRAIL SPLICE

ONE SPLICE ALLOWED FOR LENGTHS OVER 9100 mm



TYPICAL RAILING DETAILS



BRACKET DETAIL

SECTION C-C

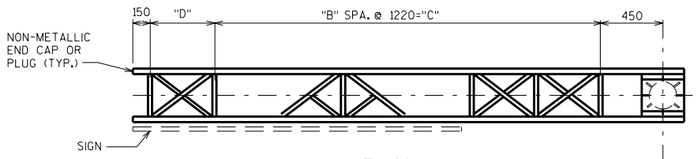
SIGN BRIDGE CATWALK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DEVELOPMENT SECTION

APPROVED: _____ DATE: 4/99

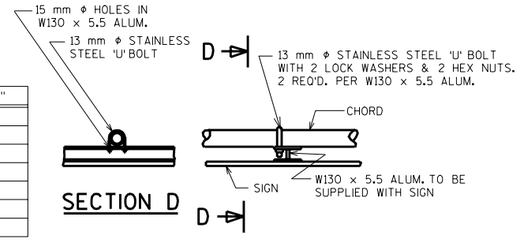
METRIC STANDARD 39.9

END PANEL "D" = 610 mm MINIMUM
= 1830 MAXIMUM



PLAN

STRUCTURE	"A"	"L"	"B"	"C"	"T1"	"D"



SECTION D

TYPICAL SIGN CONNECTION

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

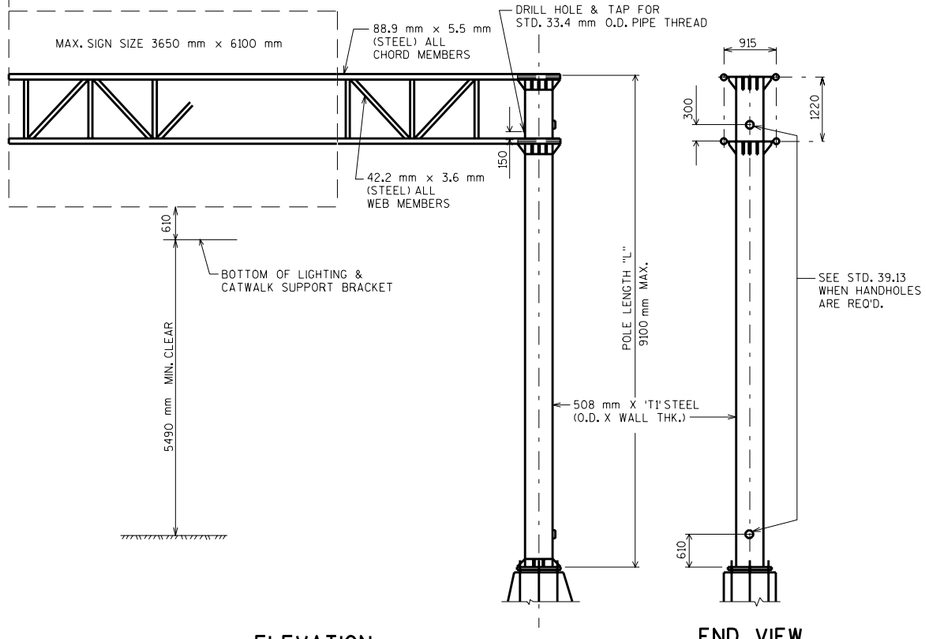
DESIGNED ACCORDING TO A.A.S.H.T.O. "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC "SIGNALS"

WIND VELOCITY = 137 km/h

ALL DIMENSIONS, THICKNESSES, & WELD SIZES IN MILLIMETERS

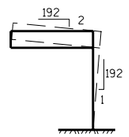
ALLOWABLE DESIGN STRESSES

CHORDS & COLUMN
(INCLD. HANDHOLE) — API-5L-X42 — fy=289 MPa
ALL OTHER PIPE — A53, GRADE B — fy=241 MPa
PLATES & BARS — A709M — fy=248 MPa
ANCHOR BOLTS — A.A.S.H.T.O. M314 — fy=380 MPa
HIGH STRENGTH BOLTS- A325M — fy=635 MPa
STRUCTURAL MEMBERS GALVANIZED A123
HARDWARE GALVANIZED — A153 CLASS C

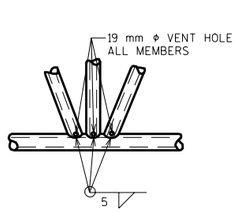


ELEVATION

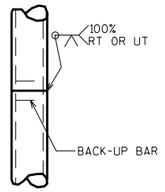
END VIEW



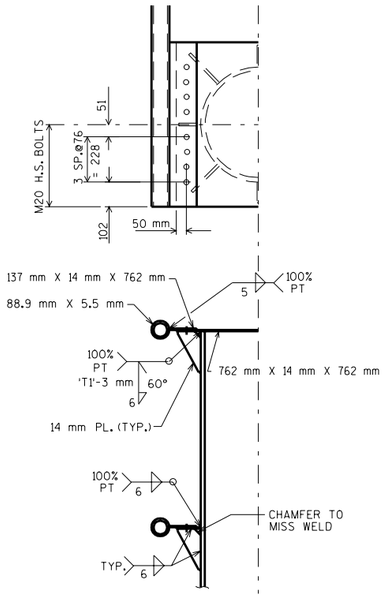
CAMBER DIAGRAM



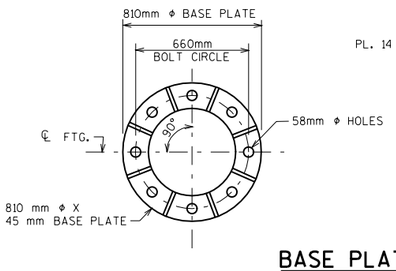
TRUSS JOINT DETAILS



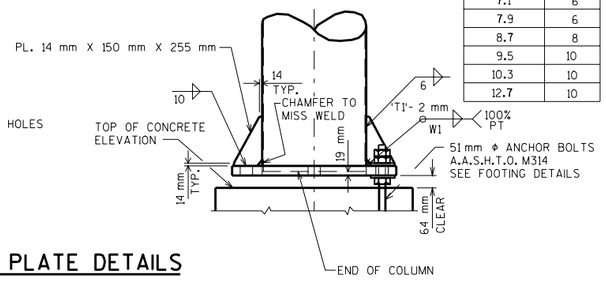
OPTIONAL COLUMN OR CHORD SPLICE DETAIL



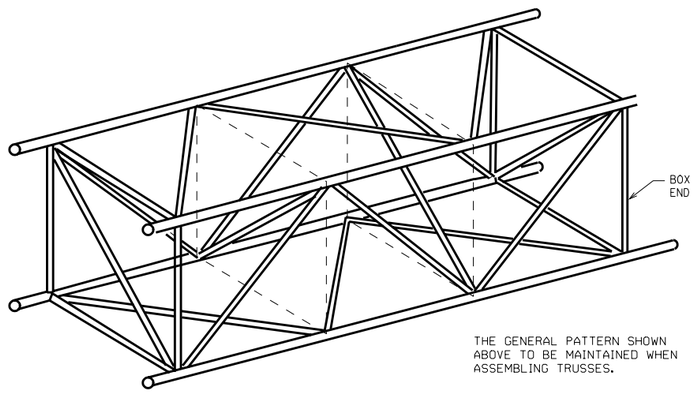
TRUSS TO COLUMN CONNECTION DETAILS



BASE PLATE DETAILS



WELD SIZE 'W1'	
POLE 'T1'	'W1'
7.1	6
7.9	6
8.7	8
9.5	10
10.3	10
12.7	10



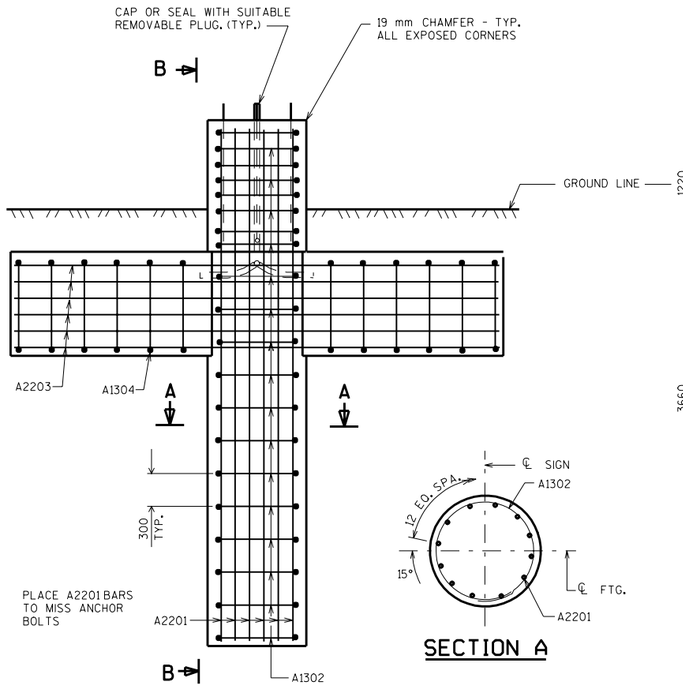
TYPICAL TRUSS SECTION

GALVANIZED STEEL CANTILEVER SIGN TRUSS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DEVELOPMENT SECTION

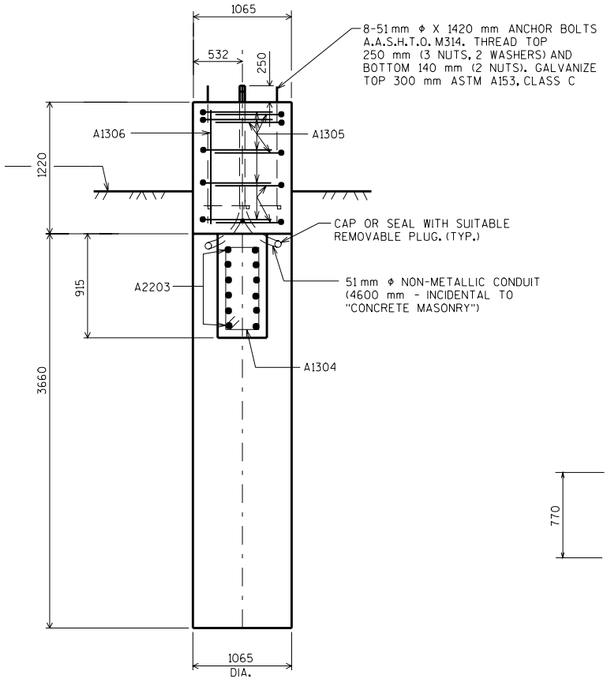
APPROVED: _____ DATE: 4/99

METRIC STANDARD 39.10



ELEVATION
(6.0 m³/ftg.)

SECTION A



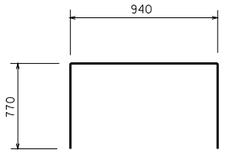
SECTION B

NOTE:
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.

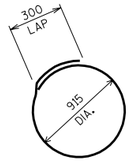
BILL OF BARS

445 kg

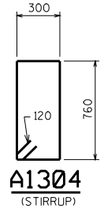
BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	CUT. DIAG.	BUN-DLE	LOCATION
A2201		12	4700				FOOTING - COLUMN/TOP
A1302		16	3200	X			FOOTING - COLUMN/TOP
A2203		12	4570				FOOTING - WINGS
A1304		12	2290	X			FOOTING - WINGS
A1305		10	2410	X			FOOTING - TOP
A1306		4	1070				FOOTING - TOP - COLUMNS



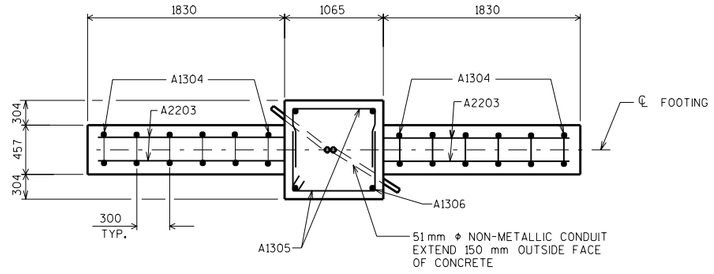
A1305



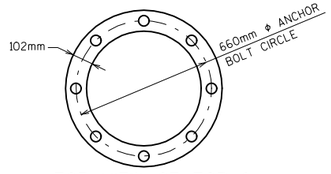
A1302



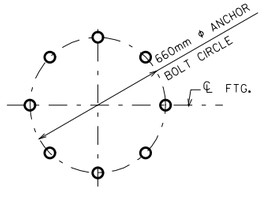
A1304
(STIRRUP)

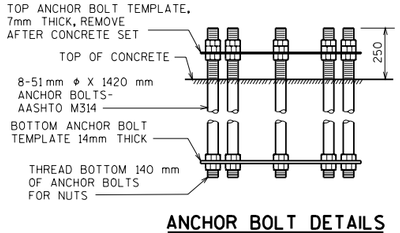


PLAN



TOP VIEW OF TOP & BOTTOM TEMPLATES





ANCHOR BOLT DETAILS

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 75 mm CLEAR UNLESS DETAILED OTHERWISE.

ALLOWABLE DESIGN STRESSES

CONCRETE MASONRY — f'c=24 MPa
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 420 — fy=420 MPa
ANCHOR BOLTS A.A.S.H.T.O. M314 — fy=380 MPa

FOUNDATION DATA

ALLOWABLE SOIL BEARING PRESSURE = 192 kPa

TOTAL ESTIMATED QUANTITIES (1 FTG.)

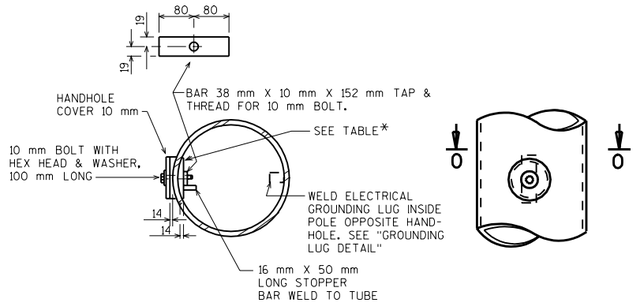
CONCRETE MASONRY, SIGN SUPPORTS — 6.0 m³
HIGH STRENGTH BAR STEEL REINFORCEMENT, SIGN SUPPORTS — 445 kg

CANTILEVER TRUSS FOOTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DEVELOPMENT SECTION

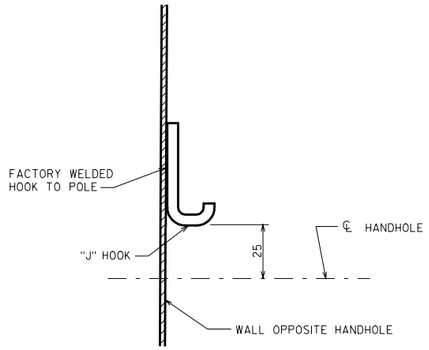
APPROVED: _____ DATE: 4/99

METRIC STANDARD 39.12



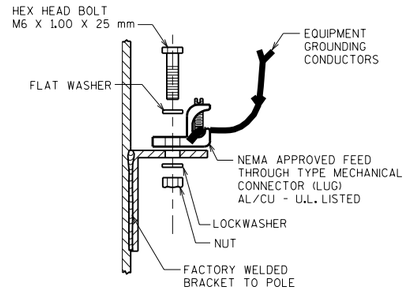
SECTION 'O'

HANDHOLE DETAILS



TYPICAL "J" HOOK LOCATION

THE "J" HOOK SHALL BE FACTORY WELDED TO THE INSIDE OF ALL COLUMNS CONTAINING ELECTRICAL WIRING. THE "J" HOOK SHALL BE ATTACHED ABOVE THE CENTERLINE OF THE UPPER HANDHOLE AND MOUNTED DIRECTLY OPPOSITE THE HANDHOLE AS SHOWN IN THE DRAWING.



GROUNDING LUG DETAIL

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

HANDHOLE NOTES

HANDHOLES SHALL BE LOCATED IN ONE COLUMNS OF THE SIGN BRIDGE STRUCTURE IF ELECTRICALLY OPERATED DEVICES ARE INSTALLED ON/IN THE STRUCTURE. COLUMNS WITH HANDHOLES SHALL BE NEAR THE ELECTRICAL SERVICE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF THE ELECTRICAL SERVICE ENTRANCE WITH THE DISTRICT TRAFFIC SECTION PRIOR TO FABRICATION OF THE SIGN BRIDGE COLUMNS AND MEMBERS. CONDUIT (AS REQ'D.) SHALL BE LOCATED, PLACED AND SIZED AS SHOWN ON THE ELECTRICAL DETAIL PLAN SHEETS.

*

UPRIGHT DIAM. SIZE	HANDHOLE PIPE O.D. X MIN. THK.
UP TO AND INCLD. 406.4 mm X 9.5 mm	141.3mm X 12.7mm
GREATER THAN 406.4 mm X 9.5 mm TO AND INCLD. 610.0 mm X 14.3 mm	168.3 mm X 14.3mm

HANDHOLE DETAILS

STATE OF WISCONSIN
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APPROVED: _____ DATE: 4/99

METRIC STANDARD 39.13